

**ORTHOCEPHALUS SALTATOR HAHN
(HETEROPTERA: MIRIDAE): CORRECTIONS OF
MISIDENTIFICATIONS AND THE FIRST AUTHENTIC REPORT
FOR NORTH AMERICA**

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Abstract. — The first authentic report is given for the halticine plant bug, *Orthocephalus saltator* (Hahn) (Heteroptera: Miridae), in North America from Canada: New Brunswick, Nova Scotia, Ontario, Prince Edward Island, and the United States: New York, Pennsylvania, and Virginia. Male parameres are illustrated and diagnoses are provided to help separate *O. saltator* from the holarctic *Orthocephalus coriaceus* (Fabricius). Previous records of *O. saltator* from Alaska are considered misidentifications of *Irbisia sericans* Stal.

While working on undetermined Miridae, we discovered a halticine mirid from Eastern North America that belongs in the genus *Orthocephalus* Fieber. These specimens have yellow tibiae and are more slender and uniformly black than the holarctic *Orthocephalus coriaceus* (Fabricius), known from the northeastern United States (Wheeler, 1985). By using Wagner's (1973) key to the Mediterranean species of *Orthocephalus*, we were able to identify these specimens as *O. saltator* (Hahn). Confirmation was made by comparing our material to European specimens of *O. saltator* housed in the U.S. National Museum of Natural History (USNM).

In this paper, we give the first authentic records of *O. saltator* for North America, redescribe the adult of *O. saltator*, figure male parameres of *O. coriaceus* and *O. saltator*, provide diagnoses to separate these two species, and correct the misidentifications of *O. saltator* in the North American literature.

Orthocephalus saltator ranges throughout Europe to eastern Siberia (Carvalho, 1959; Kulik, 1965). In North America, *O. saltator* has been incorrectly recorded from Alaska (Uhler, 1886; Schwarz, 1899; McAtee, 1923) and Canada (Provancher, 1872). Recorded hosts include: *Chrysanthemum*, *Ononis*, *Thymus serpyllum* L., *Trifolium*, and *Vicia cracca* L. (Butler, 1923); *Cichorium*, *Hieracium* and other composites [Asteraceae] (Kerzhner, 1964); and *Hieracium pilosella* L. (Wagner, 1973).

CORRECTIONS OF MISIDENTIFICATIONS

Pribilof Islands records. The most persistent record of *O. saltator* from North America was given by Schwarz (1899) (and repeated by McAtee, 1923) based on a brachypterous specimen collected on St. Paul Island (Pribilof Island group) about 180 miles north of the Aleutian Island chain, Alaska. Perusal of the USNM collection, however, did not reveal any specimens identified a *O. saltator* from Alaska or any

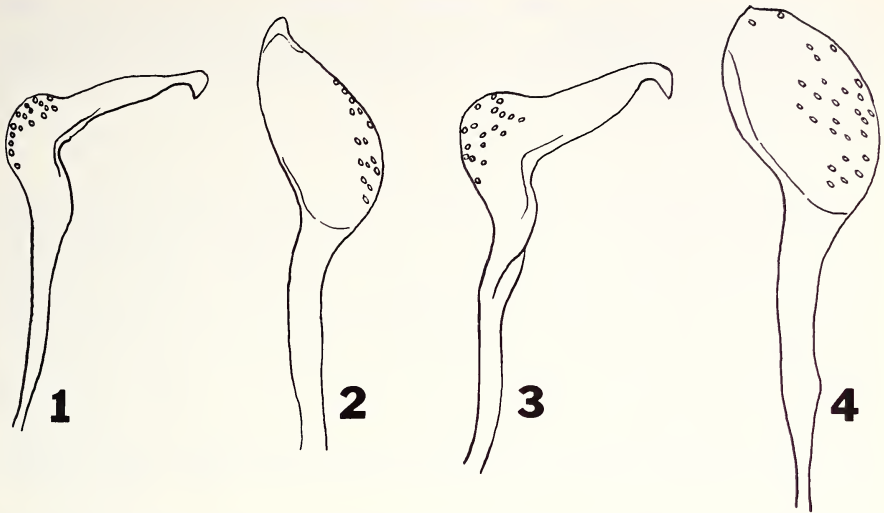
of its coastal islands, including the Pribilofs. Finally, in reading a reprint of the original report, we noticed that Heidemann (handwriting identified by R. C. Froeschner, Department of Entomology, USNM) had annotated the *O. saltator* record in the USNM copy as *Irbisia sericans* Stål, suggesting that he had seen the Schwarz specimen. Further, Heidemann (1900) reported a large number of *I. sericans* from the Pribilofs, but did not refer to Schwarz's paper, apparently because both papers were in press at the same time. The USNM collection contains most of the *I. sericans* reported by Heidemann (all confirmed by M. D. Schwartz in preparation for his excellent revision of the genus *Irbisia* Reuter [1984]). Also there is a single brachypterous female of *I. sericans* in the collection labeled "Pribilof Isl., ♀" that could be the specimen Schwarz reported (also confirmed by Schwartz). Considering that *I. sericans* and *O. saltator* are both black, have silvery pubescence and yellow tibiae, and brachypterous forms are common, it is not surprising that Schwarz confused the two species, even though *I. sericans* belongs in the subfamily Mirinae and *O. saltator*, in the Orthotylinae. Based on the overall similarity of the two species and the subsequent identification of the USNM specimens, it appears certain that the *O. saltator* record from the Pribilof Island should be applied to *I. sericans*.

Other misidentifications. Uhler (1886) in his Checklist recorded *O. saltator* from Sitka [Alaska]. This record has appeared in a number of other papers, including Reuter (1891), Van Duzee (1917), and Slater and Baranowski (1978). There is a single specimen in the USNM collection from Sitka that is determined by Uhler as *O. saltator*; it is *I. sericans* (identity confirmed by Schwartz; *I. sericans* was described from Sitka, Alaska [see Schwartz, 1984]).

The only apparent Canadian record [no locality given] for *O. saltator* was reported by Provancher (1887). In studying the Provancher collection, Van Duzee (1912) indicated that Provancher's specimen(s) was not recognizable to genus but clearly was not *O. saltator*. Knight (1917) stated that he had not seen any material of *O. saltator* from North America, but that Provancher's (1889) description fit very well. Later, he (Knight, 1920) suggested that the record probably referred to a species of *Irbisia* or, possibly in part, to *Orthocephalus mutabilis* (Fallén) [a junior synonym of *O. coriaceus* (Fabricius)]. We have been unable to find Provancher material in the collection at the University of Laval, Quebec, but because Van Duzee did see the specimens and dismissed them as not representing *O. saltator*, we consider Provancher's record of the species for North America in error.

FIRST NORTH AMERICAN RECORDS

Our combined data for *O. saltator* in North America, including records supplied by A. G. Wheeler, Jr. (Pennsylvania Department of Agriculture, Harrisburg [PDA]), are: NEW BRUNSWICK.—1 macropterous (M) male, 3 brachypterous (B) females, Fundy Nat. Park, July 6, 1966, L. A. Kelton (CNC); 1 M male, Kouchibogau Nat. Park, Aug. 21, 1978, L. B. Lyons (CNC). NEW YORK.—2 M males, Tompkins Co., Ithaca, Snyder Heights, June 27, 1978, J. G. Franclemont and E. R. Hoebeke coll. (Cornell Univ., USNM); 1 M male, Tompkins Co., Ithaca, July 3, 1974 [no coll. data] (Cornell Univ.); numerous adults (all wing forms) and nymphs, Tompkins Co., 2 mi S Trumansburg, June 24–28, 1985, E. R. Hoebeke coll., taken on spotted knapweed, *Centaurea maculosa* Lam. and chicory, *Cichorium intybus* L. (Cornell



Figs. 1–4. Male parameres of *Orthocephalus* spp. *O. saltator*: 1. Left paramere. 2. Right paramere. *O. coriaceus*: 3. Left paramere. 4. Right paramere.

Univ.); 1 B female, Onondaga Co., Elbridge–Camillus line, June 26, 1982, A. G. Wheeler, Jr. coll., taken on *Cichorium intybus* (PDA); 1 B female, Monroe Co., Egypt, July 31, 1982, A. G. Wheeler, Jr. coll., taken sweeping (PDA); 1 M female, Watkins Glen, Schuyler Co., June 28, 1985, E. R. Hoebeke coll., taken on *Cichorium intybus* (Cornell Univ.). NOVA SCOTIA.—2 M males, Berwick, July 7, 1947, Schultz and Brown (CNC); 3 M males, Kentville, July 15, 1966, L. A. Kelton (CNC); 3 M males, 1 B female, Mt. Uniacke, July 13–14, 1966, L. A. Kelton (CNC); 3 M males, 1 M female, 2 B females, St. Joseph Du Moine, July 23, 1966, L. A. Kelton (CNC). ONTARIO.—2 B females, Waterford, July 17, 1962, Kelton and Thorpe (CNC). Prince Edward Island.—1 B female, Cavendish Nat. Park, July 9, 1966, L. A. Kelton (CNC); 1 B female, Borden, Aug. 6, 1966, L. A. Kelton (CNC); 1 B female, Rustico, Aug. 4, 1966, L. A. Kelton (CNC). PENNSYLVANIA.—1 B female, Juniata Co., Richfield, July 13, 1982, A. G. Wheeler, Jr. coll., taken on *Cichorium intybus* (PDA); 1 M male, Susquehanna Co., Thompson, June 28, 1985, A. G. Wheeler, Jr. coll., taken on *Cichorium intybus* (PDA); 1 M male, 1 B female, Wyoming Co., Tunkhannock, June 28, 1985, A. G. Wheeler, Jr. coll., taken on *Cichorium intybus* (PDA). VIRGINIA.—3 B females, Rockingham Co., Harrisonburg, June 9, 1982, A. G. Wheeler, Jr. coll., taken on *Cichorium intybus* (2 PDA, 1 USNM); 8 M males, 4 B females, Rockingham Co., Harrisonburg, May 25, 1985, T. J. Henry and A. G. Wheeler, Jr., taken on *Cichorium intybus* (USNM); 1 M female, Woodstock, Rt. 81, Shenandoah Co., May 25, 1985, T. J. Henry and A. G. Wheeler, Jr., taken on *Cichorium intybus* (USNM).

These are the first correctly identified specimens, constituting a considerable range extension for this widespread western palearctic species. Because the known distribution of *O. saltator* in Eastern North America is nearly as great as that known for

O. coriaceus (Wheeler, 1985) and our earliest collection date is 1947, it seems likely that it was introduced on plant material near the time or not long after *O. coriaceus* (Knight, 1917). Its close similarity to *O. coriaceus* probably accounts for it being overlooked until now.

TAXONOMY

Description. Macropterous male: Length 5.75–6.33 mm, width 1.88–2.04 mm; overall coloration of body uniformly, shiny black; dorsum and undersurface thickly set with silvery, flattened, scale-like pubescence, dorsum with long, black, bristle-like, simple setae. Head: Width 1.08–1.12 mm, vertex 0.52–0.54 mm. Rostrum: Length 1.36–1.42 mm, extending to bases of mesocoxae. Antennae: Uniformly black, thickly pubescent, with some setae subequal to or longer than diameter of segments; segment I length 0.44–0.46 mm, II 1.40–1.48 mm, III 1.00–1.12 mm, IV 0.52–0.54 mm. Pronotum: Length 0.72–0.80 mm. Hemelytra: Uniformly black; membrane and veins dark brown or fuscous. Legs: Femora tarsi, and claws black, tibiae yellow, sometimes black at bases and apices. Genitalia: Left paramere (Fig. 1); right paramere (Fig. 2).

Macropterous female: Similar to macropterous male in color and general size, but slightly broader with the wing membrane more abbreviated.

Brachypterous female: Appearing much smaller than macropterous forms because of the much abbreviated, coleopteriform hemelytra; membrane absent. Length to apex of abdomen 3.56–4.00 mm, length to apex of hemelytra 3.24–3.76 mm. Tibiae yellow as in males, although two specimens have the metatibiae black.

Remarks. The genus *Orthocephalus* can be keyed in Knight (1923, 1941) or Slater and Baranowski (1978). Species of the genus are recognized by the convergent parmpodia and the shiny black body possessing black bristle-like setae, intermixed with silvery, flattened, scale-like pubescence.

Orthocephalus saltator is easily separated from *O. coriaceus* by the larger size, more slender form, uniformly black hemelytra, yellow tibiae, and the male parameres (Figs. 1, 2), especially in the more slender right paramere (Fig. 2). *O. coriaceus* is much shorter (macropters measure 4.75–5.00 mm long), the outer area of the clavus and inner area of the corium are pale in macropters, the tibiae are uniformly black, and the male parameres are slightly larger (Figs. 3, 4), especially the broader right paramere (Fig. 4). Brachypterous males and females of *O. saltator* are best separated by the yellow tibiae and more slender form.

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